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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/027,089	02/02/1998	FRANK H. PRORTUGAL	CAB-001	2654

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EXAMINER	
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ART UNIT	PAPER NUMBER
1634	20

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/027,089	Portugal
Examiner	**Art Unit**
Jehanne Souaya	1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Nov 5, 2002* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *19-35 and 37-49* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *25 and 37-45* is/are allowed.

6) ☒ Claim(s) *19-24, 26-35, and 46-49* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Currently claims 19-35 and 37-49 are pending in the instant application. Claims 46-49 are newly added. All the amendments and arguments have been thoroughly reviewed but are deemed insufficient to place this application in condition for allowance. Any rejections not reiterated are hereby withdrawn. The following rejections are either newly applied or are reiterated. They constitute the complete set being presently applied to the instant Application. Response to Applicant's arguments follow. This action is NON-FINAL as it introduces a new ground for rejection.

2. The rejection under 35 USC 112/2nd paragraph, in sections 9 and 10 of the previous office action are moot in view of applicant's amendment to the claims. However, the language cited by the examiner to overcome the rejection mischaracterized the original disclosure of the instant invention. The examiner's suggested claim language included "washing above the oligonucleotide's experimentally determined Tm", which erroneously maintains the introduction of new matter into the claims made in the amendment to the claims, filed Feb. 7, 2000. Therefore, a new matter rejection is set forth below. In view of the examiner's error, this action is made NON-FINAL.

Drawings

3. The drawings filed November 5, 2002 are approved.

4. New formal drawings are required in this application because the specification contains drawings (p. 18) embedded in the text. The flow diagram on page 18 of the specification is not designated as a figure, but is considered a figure and should also be included separately from the text of the invention. It is noted that this objection was made in the previous office action, but was not addressed in the response filed November 5, 2002, therefore the requirement is reiterated.

Specification

5. A "Brief Description of the Drawings" which explains the figures is not present in the specification. Such a section, with an appropriate heading such as "Description of the Drawings" should be placed in the specification at page 10, before the "Detailed Disclosure of the Invention". It is further noted that the amendment filed Nov. 5 provides figure legends for Figures 1 and 2, however the placement of such should be placed in the appropriate section entitled "Description of the Drawings". Further, a figure legend for figure 3 should be included.

6. With regard to the kit claims (claims 42-45), the specification is further objected to as it does not provide specific support for material that is considered essential. In the instant case, the kits are essential as they are part of the *claimed* invention. It is noted that the specification incorporates by reference the provisional application 60/038,117, which discloses kits. The following disclosure of the '117 application should be recited in the specification of the '089 application. At page 6, lines 15-17 of the '117 application: "Kits [are part of the invention]

containing probe molecules capable of detecting the presence of [said] species specific or genus specific nucleotides in a test sample". At page 19, lines 20-22: "In another aspect, the present invention contemplates a diagnostic kit for screening a test sample for the presence of Shigella species or E. Coli. Such a kit would contain a nucleic acid probe having specificity for a species specific or genus specific nucleotide." At page 20, lines 1-2, "A test kit may include nucleic acid molecules having a nucleotide sequence of SEQ ID NOS 1-4".

MPEP 608.01(p) "Complete disclosure filed" states:

> Prior to allowance of an application that incorporates essential material by reference to a pending U.S. application, the examiner shall determine if the referenced application has been published or issued as a patent. If the referenced application has been published or issued as a patent, the examiner shall enter the U.S. Patent Application Publication No. or the U.S. Patent No. of the referenced application in the specification of the referencing application (see MPEP § 1302.04). If the referenced application has not been published or issued as a patent, applicant will be required to amend the disclosure of the referencing application to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating the amendatory material consists of the same material incorporated by reference in the referencing application.

Appropriate correction is required.

New Grounds of Rejection

Claim Rejections - 35 USC § 112/first paragraph-New Matter

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to

which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 19-24, 26-27, 30-35 and newly added claims 46 and 47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The following is a NEW MATTER rejection.

The following recitation in claims 19 and 26 introduce new matter (the new matter will be in **bold**). In claim 19, section a: 'the use of two or more was temperatures, at least one of which is above the oligonucleotide's calculated **or experimentally determined** Tm. In claim 19, section c: exposing the hybridized oligonucleotide to two or more wash temperatures, at least one of which is above the oligonucleotide's calculated **or experimentally determined** Tm. In claim 26, sections a and c: "at or above the oligonucleotides calculated or **experimentally determined** Tm." (Please note that in claim 26, washing at the oligonucleotide's experimentally determined Tm does NOT constitute new matter as the specification provides specific demonstration of such in examples 1-4, and table 5, see pages 12-17 of the specification). The recitation of washing above the probe's (oligonucleotide) experimentally determined Tm was first introduced in the amendment filed Feb. 7, 2000. The amendment to claim 1 recited "determining operon subsequence hybridization reactivity by testing samples with one or more oligonucleotide probes *at and above* the probe's calculated or experimentally determined Tm or by making equivalent changes". The claim originally stated "at two or more temperatures

relative to the probe's calculated or experimentally determined Tm". The amendment which encompasses washing "above the probe's experimentally determined Tm" introduced new matter because neither the specification, the originally filed claims, or the 60/038,117 application provided specific support or demonstrated washing above the probe's experimentally determined Tm, or defined the meaning of "relative to" as "at or above". Further, neither the specification, the originally filed claims, or the 60/038,117 provided specific support, discussed, or demonstrated that the recitation of "or by other changes" (found in the originally filed claims) encompassed washing above the probe's experimentally determined Tm.

The originally filed claims (claim 1) recited "at two or more temperatures relative to the probe's calculated or experimentally determined Tm". The 60/038,117, recites, at page 18, lines 16-17: "Stringency washes are usually performed at 3-5 degrees C below the Tm of the perfectly matched probe...". While pages 16-19 of the '117 application discuss hybridization methods, the '117 application does not provide specific support for "washing above the probe's experimentally determined Tm". The instant specification, at page 1, teaches "using probes during hybridization under conditions of increasing severity (stringency)" under the heading "Field of the Invention". However, the specification does not teach that "increasing severity (stringency)" encompasses "washing above the probe's experimentally determined Tm". In the "Background of the Invention" the instant specification discusses operon analysis, prior art attempts and failures to distinguish between E. Coli and different Shigella species, as well as hybridization strategy taught in the prior art. At page 10, first sentence, the instant specification

teaches "Such studies do not teach the hybridization reactivity seen when the probes of the present invention directed toward rrn operon 16S sequences are hybridized at temperatures above their *calculated* Tm." In the "Detailed Disclosure of the Invention", at page 11, the instant specification asserts "in a preferred embodiment, a method for discriminating among members of a taxonomic group by hybridization analysis of operon subsequences has been determined... A sample is tested for rrn operon 16S subsequence reactivity by hybridization to each probe under various conditions to ensure increasing levels of stringency. The operon subsequence reactivity is tested by using each oligonucleotide probe under controlled stringency conditions at *two or more temperatures relative to the probe's calculated or experimentally determined* Tm." However, the specification does not define what temperatures are encompassed by "relative to the probe's calculated or experimentally determined Tm". Further, the specification does not teach or provide specific support for "washing above the probe's experimentally determined Tm. Further, in examples 1-4, and table 5 (pages 12-17), the specification provides both the calculated and experimentally determined Tm of SEQ ID NOS 1-4. However, washing is carried out either above the probe's calculated Tm, or at the probe's experimentally determined Tm. Therefore, the recitation of "washing above the probe's experimentally determined Tm" constitutes new matter. It is noted that this recitation is also included in newly added claims 46 and 47.

With regard to newly added claims 46 and 47, the recitation of "wherein the hybridized oligonucleotides are separated into at least two portions and each portion is exposed to a different

wash temperature" also does not find specific support in the instant specification as filed, the originally filed claims, or the 60/038,117 application and thus also constitutes new matter.

9. Applicant NOTE: this office action has been made non final as the language suggested in the previous office action to overcome the 35 USC 112/2nd paragraph rejections of claims 19 and 26 erroneously included new matter. The new matter rejection outlined above can be overcome by deleting the recitation of subject matter that was not present in the originally filed disclosure, that is: washing above the oligonucleotide's experimentally determined Tm.

It is noted that should such an amendment be made to claim 19, the claim would be free of the prior art. The amendment to claim 19 to specifically recite a positive step of washing above the probe's calculated Tm is unobvious over the teachings of Hammond, Hogan, Anderson, and Dyson in view of Cilia as none of the references, alone or in combination, teach or suggest washing above an oligonucleotide's calculated Tm in a method of discriminating between or among Shigella and E.coli by selecting an oligonucleotide having a sequence from a DNA or RNA operon which differs by one or mor bases from at least one of the operons, hybridizing the oligonucleotide to nucleic acid from the sample, exposing the hybridized oligonucleotide to two or more wash temperatures, at least one of which is above the oligonucleotide's calculated Tm, and determining the presence or absence of hybridized nucleic acid. While Dyson teaches (p. 147, first para, lines 7-9) that the washing temperature for probes can be gradually increased until the T_m is reached, Dyson teaches that the final wash should be at

the T_m for 2 min only. Neither Dyson, nor any of the other references provide any specific teaching or motivation to wash the hybridized probe at a temperature above the probe's calculated Tm.

It is noted that should such an amendment to claim 26 be made, it would overcome the new matter rejection. The claim would still be rejected under 35 USC 103(a) as the claim does not recite that washing must be carried out above the probe's calculated Tm. However, as noted in the previous office action and reiterated immediately below, the 35 USC 103 rejection would be overcome by amending to recite "wherein said oligonucleotide consists of the sequence of SEQ ID NO: 4 or wherein the oligonucleotide comprises a sequence selected from the group consisting of SEQ ID NOS 1, 2, and 3."

Claim Rejections - 35 USC § 103

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond et al (US Patent 5,374,718: Dec. 20, 1994) or in the alternative, Hogan (US Patent 5,714,321, 102(e) date: 2/22/94), each in view of Dyson, N.J. (Essential Molecular Biology Vol. II: A Practical Approach, chapter 5, pages 111-156, Brown, T.A. ed. Oxford University Press, Oxford, 1992) Anderson (Gene Probes 2: Hybridization Strategy, pp 1-29, Oxford University Press, New York, 1995) Cilia et al (Mol. Biol. Evol., vol. 13, pp 451-461, 1996) and Accession number X80728, 3/29/1996).

The claims are drawn to a method of discriminating between or among species of Shigella and E. coli in a sample containing organisms of one or mor taxonomic groups by selecting a probe from an operon common to two or more organisms of the taxonomic groups, wherein the probe contains one or more base mismatches and wherein the probe is capable of discriminating between organisms by hybridization at two or more wash temperatures at or above the probes calculated or experimentally determined Tm, hybridizing the probe to the nucleic acid in the sample, and determining the presence or absence of hybridizing nucleic acid, wherein the oligonucleotide comprises SEQ ID NO 4..

Methods of using probes to identify or differentiate closely related organisms was well known in the art at the time of the invention, as well as manipulations of reaction conditions to increase stringency, as can be exemplified by the teachings in the following references.

Hammond teaches hybridization assay probes specific for chlamydia pneumoniae which can distinguish *C. pneumoniae* form its most closely related taxonomic or phylogenetic neighbors (see col. 3, lines 35-40). Hammond teaches obtaining suitable probes for detection and discrimination. Hammond generally teaches that all prokaryotic organisms (except for viruses) contain rRNA genes. Hammond teaches that variable regions of rRNA sequences from the 16S rRNA of *C. pneumoniae* were identified by sequencing the rRNA of *C. pneumoniae* and its closely related phylogenetic neighbors and aligning the sequences to reveal areas of maximum homology and also alignment for regions of sequence variation (col. 3, lines 41-55). For construction of suitable probes, Hammond teaches that first, the stability of the probe:target

nucleic acid should be chosen to be compatible with assay conditions, ie: hybridization involving complementary nucleic acids of higher G-C content will be stable at higher temperatures (col. 4, lines 51-65). Hammond teaches that ionic strength and incubation temperature under which a probe will be used, should be taken into account. Hammond teaches that incubation at temperatures below the optimum Tm may allow mismatched base sequences to hybridize and can therefore result in reduced specificity (col. 5, lines 8-15). Hammond further teaches that it is desirable to have probes which hybridize only under conditions of high stringency.

Hogan also teaches a method for preparing probes for use in qualitative and quantitative assays wherein the probes are capable of detecting and differentiating between eubacteria (see abstract). Hogan also teaches the hybridization of *E. Coli* probes to closely related organisms such as *Shigella boydii, Sh. flexneri, Sh. dysenteriae, and Sh. sonnei* (see col. 52, table 54). Hogan also generally teaches hybridization strategies, including variations in temperature, probe length, probe composition, and ionic strength in methods of identification of target nucleic acids (cols 7-11) and specifically points out that use of temperatures below the optimum (Tm) may allow mismatched base sequences to hybridize and can therefore result in reduced specificity (col. 10, lines 21-24). Hogan also specifically teaches using filter hybridization methods, and the use of rRNA sequences in distinguishing between eubacteria (cols 1 and 2).

Anderson teaches hybridization strategies in constructing probes for methods of screening and identification. Anderson teaches factors affecting the rate of hybridization and the stability of hybrids, (p. 3-13) including probe length, composition, and temperature. Anderson

specifically applies these manipulations to filter hybridization. Anderson also specifically teaches that to detect closely related family members, it is better to use stringent hybridization conditions followed by stringent washing conditions (for example, from the teaching of the previous three references, the ordinary artisan would be taught that such a condition could involve high temperature, etc) (p. 13, last sentence).

Dyson teaches that nucleic acid hybridization is an important component of many molecular biology techniques, and that specifically, filter hybridization methods exploit the specificity of molecular hybridization for the detection of rare sequences in a complex mixture (see p. 111, first paragraph). Dyson teaches different methods for immobilization of nucleic acids on filters (pp 111-132) and teaches factors affecting hybridization of nucleic acids (pp 132-151). Dyson teaches that such factors include Tm, base composition, mismatching (p 133), and ionic strength affect hybridization. Dyson teaches that filter hybridization involves three basic steps: pre-hybridization, hybridization, and washing (p. 137, section 3.4). Dyson teaches that after hybridization, the filter is washed to remove the probe. Dyson teaches that short DNA duplexes have a reduced melting temperature and the Tm of oligonucleotide probes can be calculated, although the actual Tm should be determined experimentally (see p 146). Dyson specifically teaches that oligonucleotides are hybridized at a temperature between 5 and 10 degrees below the Tm for 14-48 hours and that filters are then washed four times *at* the hybridization temperature (see p. 147, lines 1-3). Dyson teaches that often, such a wash is enough, however Dyson teaches that if the filters still show considerable activity above

background, the wash temperature should be increased by 2-3 °C and the wash should be repeated. Dyson specifically teaches the washing temperature can be increased until the Tm is reached (p. 147, lines 7-8).

Neither Hammond nor Hogan teach washing at the probe's Tm in a method of hybridization, however Dyson does. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to improve the method of Hammond or Hogan, in view of the general teachings of Anderson, and the specific teaching of Dyson that wash temperatures, in hybridization methods, can be increased until the Tm of the probe is reached when washing below the Tm still shows considerable activity above background.

Although neither Hammond nor Hogan in view of Dyson and Anderson teach using the probes of the instant invention, Cilia et al teaches sequence heterogeneities among 16S RNA sequences of E. Coli and Shigella (see abstract, and figure 3) and teaches nucleotide differences among Eubacteria by showing a line up of regions from 16S genes across species levels, showing the nucleotide sequence similarities and differences. Further, accession number X80728 teaches the sequence of the E. Coli rrnE operon. Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made use the sequence of accession number X80728, to arrive at the instantly claimed invention (accession number X80728 is a sequence that comprises SEQ ID NO 4), for the use of a probe that would be reasonable expected to specifically detect *E. Coli* from Shigella in a sample. The ordinary artisan would have been motivated to use a probe of the rrnE gene of E.coli to specifically detect E. Coli

and differentiate *E.coli* from *Shigella* as Cilia teaches how closely related the two genus of bacteria are (see Fig 1). As the sequences of the 16S rRNA and rDNA sequences of the *Shigella* species and *E.coli* sequences were known at the time of the invention, it would have been obvious for the ordinary artisan to construct probes and primers to regions of variability to be able to differentiate the closely related bacteria. Such methods were readily known in the art as is shown by the large amount of literature available in the art that identifies regions of variability among closely related bacteria for the purpose of constructing probes and primers useful in methods of differentiation.

It would have further been prima facie obvious to one of ordinary skill in the art to raise the temperature of the wash step to achieve maximum specificity and selectivity as Dyson teaches that the temperature of the wash step can be varied by incrementally increasing the temperature. Dyson also provides examples of lengths of probes as well as suggested hybridization and wash temperatures (see table 2, p. 147). In each case, the wash temperature is above the hybridization temperature. Therefore, although Anderson and Dyson teach hybridizing 5-10 degrees *below* the Tm of the probe, Dyson teaches washing above the hybridization temperature and that the wash temperature can be increased by 2-3 degrees. With such a teaching, and the examples in table 2, it would have been readily apparent to one of ordinary skill in the art to increase wash temperatures by 2-3 degrees at a time, and repeat as needed until suitable hybridization had occurred. It would have further been prima facie obvious to one of ordinary skill that because Dyson teaches *suggested* conditions and teaches that manipulations of

conditions, such as wash temperature, can be performed to achieve the desired result, a certain amount of manipulation of conditions (such as changing salt concentration, varying temp of both hybridization and washing steps) could be necessary. As the level of skill in the art regarding hybridization of oligonucleotides is very high, the ordinary artisan would have considered that the identification of optimum Tm for washing is a matter of routine optimization and that while one would initially wash at Tm below the Tm of the probe, where such conditions are insufficient to distinguish, the ordinary artisan would know to adjust the conditions, either by increasing the temperature or adjust the buffer (ie: salt concentration).

Note: this rejection can be overcome by amending claim 26 to recite instead "wherein said oligonucleotide consists of the sequence of SEQ ID NO: 4 or wherein the oligonucleotide comprises a sequence selected from the group consisting of SEQ ID NOS 1, 2, and 3." The prior art outlined above does not teach or provide any motivation to use the specific sequence consisting of SEQ ID NO 4. It is noted that claim 30, which depends from claim 26, recites "consisting of SEQ ID NO: 4" and is therefore not included in this rejection.

Response to Arguments

11. The argument traverses that the rejection should be withdrawn as the claim now recites a specific positive step of exposing the hybridized oligonucleotide to at least one wash temperature above the oligonucleotide's calculated or experimentally determined Tm. This argument has been thoroughly reviewed but was not found persuasive because the limitation of washing with at

least one wash temperature above the oligonucleotide's calculated or experimentally determined Tm is not present in claim 26. While the inclusion of the positive wash step in section c of claim 26 overcomes one of the grounds of rejection made in the 103(a) rejection in the previous office action, this amendment is not sufficient to distinguish the claims from the prior art cited above because the claim still recites an oligonucleotide "comprising SEQ ID NO: 4".

Claim Rejections - 35 USC § 112/2nd paragraph

12. Newly amended claims 28, 29, and newly added claims 46-49, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 28 and 29 are dependent on the method of claim 48. The claims are indefinite in that it is unclear if the "oligonucleotide" recited in the claims is the same as the nucleic acid probe recited in the method of claim 48. This rejection can be overcome by deleting the recitation of "an oligonucleotide" and reciting instead --a nucleic acid probe-- in line 1 of each claim.

Claims 46 and 47 are indefinite in the recitation of "hybridized oligonucleotide are separated into at least two portions" as it is unclear if the hybridized probes are cleaved or cut in half. The specification does not make this clear as the specification does not teach or define "hybridized oligonucleotide's are separated into at least two portions". Furthermore, the recitation of "the hybridized oligonucleotides" lacks proper antecedent basis as it is unclear if

"the hybridized oligonucleotides" (plural) are the same as the 'hybridized oligonucleotide' (singular) of section c of claims 19 and 26 respectively.

Claims 48 and 49 are indefinite because the claims are unclear as to what the nucleic acid probes are hybridizing to. This rejection can be overcome by amending the claims to recite: A method of using a nucleic acid probe of claim 25 [a kit of claim 43] to discriminate between Shigella and E. Coli or among species of Shigella and E. Coli in a sample, which comprises the step of hybridizing said nucleic acid probe [the probes of said kit] to nucleic acid in the sample.

Conclusion

13. Claims 25 and 37-45 are allowable over the cited prior art.

14. Newly amended claims 28 - 29 and newly added claims 48-49 are allowable over the cited prior art, but are not allowable as they are rejected under 35 USC 112/2nd paragraph. Amendment of the claims as indicated by the examiner above, would make the claims allowable. Claims 19-24, 27, and 30-35, are allowable over the cited prior art, however they are rejected under 35 USC 112/first paragraph for new matter. Removal of the new matter from the claims would make these claims allowable. Claim 26 is rejected under 35 USC 112/first paragraph for new matter and under 35 USC 103(a). Claim 26 would be allowable if amended to remove the new matter and amended as suggested by the examiner in section 10 above.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Jehanne Souaya whose telephone number is (703)308-6565. The examiner can normally be reached Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-3014.

Any inquiry of a general nature should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Jehanne Souaya
Patent examiner
Art Unit 1634
Jehanne Souaya
1/15/03